

# **EXHIBIT 23**

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AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

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**Declaration under Rule 4.17:**

— of inventorship (Rule 4.17(iv)) for US only

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28 July 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

WO 2005/027936 A3

(54) Title: PHARMACEUTICAL COMPOSITIONS AND THERAPEUTICAL TREATMENT WITH OLIGO-BETA-(1, 3)-GLUCANS

(57) Abstract: A therapeutic method comprising administration of a composition comprising an amount of oligo- $\beta$ -(1, 3)-glucan and a pharmaceutically acceptable carrier, to a human being or to a warm-blood animal suffering from a disease selected from the group consisting in a tumor, a cancer, a viral disease, a bacterial disease, a fungal disease, a disease of the immune system, an auto-immune disease or a disease related to a deficiency of immunostimulation, wherein the amount of oligo- $\beta$ -(1, 3)-glucan is effective to treat the disease.

# INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/010995

A. CLASSIFICATION OF SUBJECT MATTER					
IPC 7	A61K31/702	A61K31/716	A61K45/06	A61P31/04	A61P31/12
	A61P35/00	A61P37/00	A61P31/10		

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC 7 A61K A61P

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, CHEM ABS Data, EMBASE, BIOSIS, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Section Ch, Week 199601 Derwent Publications Ltd., London, GB; Class B03, AN 1996-006314 XP002316635 & JP 07 284397 A (DAINIPPON INK & CHEM INC) 31 October 1995 (1995-10-31) abstract ----- WO 99/39718 A (LABORATOIRES GOEMAR S.A; YVIN, JEAN-CLAUDE; CRUZ, FLORENCE; DESCAMPS,) 12 August 1999 (1999-08-12) page 3, line 18 - page 5, line 12 claims 1,2 ----- -/-	1,2,5-11
X	----- ----- -----	1,2,5-11

Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

### ° Special categories of cited documents :

- "A" document defining the general state of the art which is not considered to be of particular relevance
- "E" earlier document but published on or after the international filing date
- "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
- "O" document referring to an oral disclosure, use, exhibition or other means
- "P" document published prior to the international filing date but later than the priority date claimed

- "T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
- "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
- "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.
- "&" document member of the same patent family

Date of the actual completion of the international search

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Date of mailing of the international search report

03.06.2005

Name and mailing address of the ISA

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## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP2004/010995

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DATABASE WPI Section Ch, Week 199644 Derwent Publications Ltd., London, GB; Class B03, AN 1996-439564 XP002316636 & JP 08 217785 A (DAINIPPON INK & CHEM INC) 27 August 1996 (1996-08-27) abstract -----	1,5-11
X	US 5 980 916 A (YVIN ET AL) 9 November 1999 (1999-11-09) example 2 examples 6,7 -----	11

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/EP2004/010995

### Box II Observations where certain claims were found unsearchable (Continuation of item 2 of first sheet)

This International Search Report has not been established in respect of certain claims under Article 17(2)(a) for the following reasons:

1.  Claims Nos.:  
because they relate to subject matter not required to be searched by this Authority, namely:  

Although claims 1-10 are directed to a method of treatment of the human/animal body, the search has been carried out and based on the alleged effects of the compound/composition.
2.  Claims Nos.:  
because they relate to parts of the International Application that do not comply with the prescribed requirements to such an extent that no meaningful International Search can be carried out, specifically:
3.  Claims Nos.:  
because they are dependent claims and are not drafted in accordance with the second and third sentences of Rule 6.4(a).

### Box III Observations where unity of invention is lacking (Continuation of item 3 of first sheet)

This International Searching Authority found multiple inventions in this international application, as follows:

see additional sheet

1.  As all required additional search fees were timely paid by the applicant, this International Search Report covers all searchable claims.
2.  As all searchable claims could be searched without effort justifying an additional fee, this Authority did not invite payment of any additional fee.
3.  As only some of the required additional search fees were timely paid by the applicant, this International Search Report covers only those claims for which fees were paid, specifically claims Nos.:
4.  No required additional search fees were timely paid by the applicant. Consequently, this International Search Report is restricted to the invention first mentioned in the claims; it is covered by claims Nos.:

1-3 (partially), 4 (completely), 5-11 (partially)

Remark on Protest

The additional search fees were accompanied by the applicant's protest.  
 No protest accompanied the payment of additional search fees.

FURTHER INFORMATION CONTINUED FROM PCT/ISA/ 210

This International Searching Authority found multiple (groups of) inventions in this international application, as follows:

1. claims: 1-3 (partially), 4 (completely), 5-11 (partially).

The use of an oligo-beta-(1,3)-glucan for the treatment of tumour or cancer.

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2. claims: 1-3 (partially), 5-11 (partially).

The use of an oligo-beta-(1,3)-glucan for the treatment of a viral disease.

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3. claims: 1-3 (partially), 5-11 (partially).

The use of an oligo-beta-(1,3)-glucan for the treatment of a bacterial disease.

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4. claims: 1-3 (partially), 5-11 (partially).

The use of an oligo-beta-(1,3)-glucan for the treatment of a fungal disease.

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5. claims: 1-3 (partially), 5-11 (partially).

The use of an oligo-beta-(1,3)-glucan for the treatment of a disease of the immune system, an autoimmune-disease or a disease related to a deficiency of immunostimulation.

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**INTERNATIONAL SEARCH REPORT**

 International Application No  
 PCT/EP2004/010995

Patent document cited in search report		Publication date		Patent family member(s)		Publication date
JP 7284397	A	31-10-1995	NONE			
WO 9939718	A	12-08-1999	FR AU CA DE EP ES WO JP US	2774289 A1 2171099 A 2319677 A1 69918953 D1 1052996 A1 2226331 T3 9939718 A1 2002502887 T 6750208 B1		06-08-1999 23-08-1999 12-08-1999 02-09-2004 22-11-2000 16-03-2005 12-08-1999 29-01-2002 15-06-2004
JP 8217785	A	27-08-1996	NONE			
US 5980916	A	09-11-1999	FR AT DE DE DK EP ES WO GR JP PT	2719772 A1 203894 T 69522103 D1 69522103 T2 759740 T3 0759740 A1 2161888 T3 9531177 A1 3037066 T3 10500126 T 759740 T		17-11-1995 15-08-2001 13-09-2001 21-03-2002 05-11-2001 05-03-1997 16-12-2001 23-11-1995 31-01-2002 06-01-1998 30-01-2002